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CLAIMS:

1.   A method for updating an image on a bi-stable display, the method
comprising:

determining an image holding time for at least one pixel (2) in the bi-stable display
(310);

determining an energy with which to provide a compensating impulse (C) according
to the image holding time; and

applying a drive waveform (900, 920, 940, 960; 1000, 1020, 1040, 1060; 1100,
1120, 1140, 1160; 1220, 1240, 1260) including the compensating impulse to the at least one
pixel to update the at least one pixel.

2.   The method of claim 1, wherein:

the bi-stable display comprises an electrophoretic display.

3.   The method of claim 1, wherein:

the determining of the energy comprises determining the energy with which to
provide the compensating impulse as a predetermined function of the image holding time.

4.   The method of claim 3, wherein:

the predetermined function of the image holding time is determined by measuring
brightness (L) as a function of impulse energy for different image holding times.

5.   The method of claim 1, wherein:

the determining of the image holding time for the at least one pixel comprises
measuring the image holding time for the at least one pixel.

6.   The method of claim 1, wherein:

a polarity of the compensating impulse is selected to cause particles in the bi-stable
display to move in a direction resulting in an initial optical state of the at least one pixel.

7.   The method of claim 1, wherein:

the compensating impulse (C) is provided in the drive waveform prior to all data
pulses (S1, R, D, ED).

8.   The method of claim 1, wherein:

the compensating impulse (C) is provided in the drive waveform following a shaking pulse (S1), and prior to a reset pulse (R and extreme drive pulse (ED).

9.   The method of claim 1, wherein:

the compensating impulse (C) is provided in the drive waveform immediately preceding, and adjacent to, an extreme drive pulse (ED).

10.   The method of claim 1, further comprising:

providing data defining different waveforms for respective different image holding times;

wherein the applying the drive waveform comprises selecting one of the different waveforms to apply to the at least one pixel based on the determined image holding time.

11.   The method of claim 10, further comprising:

storing the data defining the different waveforms in respective different look-up tables (120).

12.   The method of claim 10, wherein:

the data defining the different waveforms includes data for scaling a standard compensating impulse according to the determined energy.

13.   The method of claim 10, wherein:

the providing data defining different waveforms comprises providing data for substantially equal increments of brightness (L) associated with the respective different image holding times.

14.   A program storage device tangibly embodying a program of instructions executable by a machine to perform a method for updating an image on a bi-stable display, the method comprising:

determining an image holding time for at least one pixel (2) in the bi-stable display (310);

determining an energy with which to provide a compensating impulse (C) according to the image holding time; and

applying a drive waveform (900, 920, 940, 960; 1000, 1020, 1040, 1060; 1100, 1120, 1140, 1160; 1220, 1240, 1260) including the compensating impulse to the at least one pixel to update the at least one pixel.

15.   A display device, comprising:

a bi-stable display (310, 400); and

a control (100) for updating an image on the bi-stable display by determining an image holding time for at least one pixel (2) in the bi-stable display, determining an energy with which to provide a compensating impulse (C) according to the image holding time, and applying a drive waveform (900, 920, 940, 960; 1000, 1020, 1040, 1060; 1100, 1120, 1140, 1160; 1220, 1240, 1260) including the compensating impulse to the at least one pixel to update the at least one pixel.

16.   The display device of claim 15, wherein:

the bi-stable display comprises an electrophoretic display.

17.   The display device of claim 15, wherein:

the control determines the energy with which to provide the compensating impulse as a predetermined function of the image holding time.

18.   The display device of claim 17, wherein:

the predetermined function of the image holding time is determined by measuring brightness (L) as a function of impulse energy for different image holding times.

19.   The display device of claim 15, further comprising:

providing data defining different waveforms for respective different image holding times;

wherein the applying the drive waveform comprises selecting one of the different waveforms to apply to the at least one pixel based on the determined image holding time.

20.   The display device of claim 19, wherein:

the providing data defining different waveforms comprises providing data for substantially equal increments of brightness (L) associated with the respective different image holding times.

21.   A control (100) comprising first means for determining an image holding time for at least one pixel (2) in a bi-stable display, second means for determining, according to the image holding time, an energy of a compensating impulse (C) and third means for applying a drive waveform (900, 920, 940, 960; 1000, 1020, 1040, 1060; 1100, 1120, 1140, 1160; 1220, 1240, 1260) including the compensating impulse to the at least one pixel to update the at least one pixel.